

TITLE OF INVENTION:

Fire Protection Sprinkler

By

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FEDERALLY SPONSORED RESEARCH:

Not Applicable

SEQUENCE LISTING OR PROGRAM:

Not Applicable

BACKGROUND—FIELD OF INVENTION:

This invention relates to fire protection, specifically, portable roof top sprinklers.

BACKGROUND—DESCRIPTION OF PRIOR ART:

Current methods used to prevent houses from burning during a fire is to place a standard lawn sprinkler and hope it doesn't turn over; using the current roof top sprinklers as seen in U.S. Patent #4824020 issued to Randall Harward on April 25, 1989, that cannot be adjusted to the angle of different roof structures, causing the system to tip over and become useless in its purpose; or installing a sprinkler system within the construction of the roof top as seen in U.S. Patent # 5,263,543 issued to Ralph Nigro on November 23, 1993,

that could interfere with the integrity of the house if a leak should occur, causing costly damage to the structure before it would be detected.

OBJECTS AND ADVANTAGES:

Accordingly, several objects and advantages of this invention are:

- a. To provide a portable fire protection system.
- b. To provide a portable fire protection system that is inexpensive.
- c. To provide a portable fire protection system that can be mounted on different types of surfaces.
- d. To provide a portable fire protection system that can be mounted on different shapes of surfaces.
- e. To provide a portable fire protection system that can be manufactured from readily available materials.
- f. To provide a portable fire protection system that can be mass produced using current manufacturing procedures.

SUMMARY OF INVENTION:

The present invention relates to the fire suppression systems now present in the prior art, it provides an improved Fire Protection System. The present invention allows for the Fire Protection System to be mounted on any uneven or odd shaped surface, ranging from vertical, horizontal or overhead securely without requiring any additional mounting apparatus. The present invention allows the pressurized water to be emitted from the Fire Protection System at any angle or direction required. The present invention allows for the Fire Protection System to be used with any type of water delivery system available.

DRAWING FIGURES:

Fig. 1 shows a perspective view of the fire protection system.

Fig. 2 shows an exploded perspective view of the fire protection system.

Fig. 3 shows a perspective view of the Water manifold assembly with a sprinkler head attached.

Fig. 4 shows a perspective view of the outside stand assembly with rotator plates attached.

Fig. 5 shows a perspective view of the inside stand assembly with rotator plates attached.

Fig. 6 shows a perspective view of a multitude of fire protection systems attached to the

roof of a house with a spray of water emitting from the spray heads.

REFERENCE NUMERALS IN DRAWINGS:

- 18** Fire Protection Sprinkler system
- 20** Water manifold
- 22a** Left side rear support rotator disc
- 22b** Right side rear support rotator disc
- 23a** Left side rear support rotator disc slot
- 23b** Right side rear support rotator disc slot
- 24a** Left side front support rotator disc
- 24b** Right side front support rotator disc
- 25a** Left side front support rotator disc slot
- 25b** Right side front support rotator disc slot
- 26a** Left side water manifold rotator disc
- 26b** Right side water manifold rotator disc
- 27a** Left side water manifold rotator disc slot
- 27b** Right side water manifold rotator disc slot
- 28** Water manifold connecting plug
- 30a** Left side threaded nut
- 30b** Right side threaded nut
- 32a** Left side bolt
- 32b** Right side bolt
- 34** Sprinkler head assembly
- 36** Water manifold hose bib assembly
- 38** Water hose assembly
- 40** Water manifold to sprinkler assembly connector tee
- 42a** Left side rear support leg
- 42b** Right side rear support leg
- 44a** Left side rear support leg adjuster tube
- 44b** Right side rear support leg adjuster tube
- 46a** Left side rear support leg adjuster lock device
- 46b** Right side rear support leg adjuster lock device
- 48a** Left side rear support adjuster leg

- 48b** Right side rear support adjuster leg
- 49a** Left side and Right side rear support leg connector
- 49b** Left side and Right side front support leg connector
- 50a** Left side front support leg
- 50b** Right side front support leg
- 51a** Left side front support Leg adjuster tube
- 51b** Right side support leg adjuster tube
- 52a** Left side front support leg adjuster lock device
- 52b** Right side front support leg adjuster lock device
- 53a** Left side front support leg adjuster
- 53b** Right side front support leg adjuster
- 54** House
- 55** Water Spray

DETAILED DESCRIPTION:

Description-Fig 1

The following detailed description is directed to the presently contemplated mode of carrying out the invention. This description is not intended to be limitative, but be made solely for the purpose of illustrating the general principles of the invention. The various features and advantages of the present invention may be more readily understood with reference to the following detailed description, taken in conjunction with the accompanying drawings like numbers refer to the same feature or part thereof.

The preferred embodiment of the Fire Protection Sprinkler system of the present invention is illustrated in **Fig.1**, a perspective view of the fire protection system. The water manifold **20** freely supports the left side rear support rotator disc **22a**, right side rear support rotator disc **22b**, left side front support rotator disc **24a**, and right side front support rotator disc **24b** at the through hole at approximately the center of the diameter of the discs. The planer surface of the left side rear support rotator disc **22a**, right side rear support rotator disc **22b**, left side front support rotator disc **24a**, right side front support rotator disc **24b** are positioned perpendicular to the surface of the water manifold **20**. The left side rear

support rotator disc 22a and left side front support rotator disc 24a are positioned to the left side of the water manifold 20 closest to the water manifold hose bib assembly 36. The right side rear support rotator disc 22b and right side front support rotator disc 24b are positioned at the right side of the water manifold 20 closest to the water manifold connection plug 28. The left side water manifold rotator disc 26a, is fixed securely at the left side of the water manifold 20 so that the rotational movement along the linear axis of water manifold 20 is transferred to the axis of the left side water manifold rotator disc 26a. The right side water manifold rotator disc 26b, is fixed securely on the right side of the water manifold 20 so that the rotational movement along the linear axis of the water manifold is transferred to the axis of the right side water manifold rotator disc 26b. The left side front support rotator disc 24a is sandwiched between the left side rear support rotator disc 22a and the left side water manifold rotator disc 26a. The left side bolt 32a passes through slots 23a, 25a, and 27a with the left side nut 30a screwing onto the left side bolt 32a. This applies a clamping force to the planer surfaces of the left side rear support rotator disc 22a, left side front support rotator disc 24a, left side water manifold rotator disc 26a, thus restricting the rotational movements of the left side disc assembly.

The right side front support rotator disc 24b is sandwiched between right side rear support rotator disc 22b and right side water manifold rotator disc 26b. Right side bolt 32b passes through slots 23b, 25b, 27b with right side nut 30b screwing onto right side bolt 32b thus applying clamping force to the planer surfaces of right side rear support rotator disc 22b, right side front support rotator disc 24b, right side water manifold rotator disc 26b, restricting the rotational movements of right side rear support rotator disc 22b, right side front support rotator disc 24b, right side water manifold rotator disc 26b securing right side rear support rotator disc 22b, right side front support rotator disc 24b, right side water manifold rotator disc 26b from any movements about the planer surfaces of right side rear support rotator disc 22b, right side front support rotator disc 24b, right side water manifold rotator disc 26b. Leg 42a and 42b are connected at the end portion of the leg to the end portions of rear leg support connector 49a forming a u-shape support member. The remaining end of the leg 42a is attached securely to the outer diameter of the left side rear support rotator disc 22a at a point opposite the slot 23a on the left side rear support rotator disc 22a. The remaining end of the leg 42b is attached to the outer diameter of right side rear support rotator disc 22b at a point opposite the slot 23b on right side rear support

rotator disc 22b. Legs 50a and 50b are connected at the end portion of the leg to the end portions of front leg support connector 49b forming a u-shape support member. The remaining end of the leg 50a is attached securely to the outer diameter of the left side front support rotator disc 24a at a point opposite the slot 25a on the left side front support rotator disc 24a. The remaining end of the leg 50b is attached to the outer diameter of the right side front support rotator disc 24b at a point opposite the slot 25b on right side front support rotator disc 24b. Left side rear support leg adjuster tube 44a is permanently attached to the left side rear support leg 42a, facing out at the lower portion of the left side rear support leg 42a. Left side rear support adjuster leg 48a is inserted through the left side rear support leg adjuster tube 44a. The diameter of the left side rear support adjuster leg 48a is sufficiently smaller in diameter than the diameter of the left side rear support leg adjuster tube 44a. This allows the left side rear support leg adjuster 48a to move freely in the left side rear support leg adjuster tube 44a. When the left side rear support adjuster leg 48a is positioned where it is in the correct location the locking device 46a locks the left side rear support adjuster leg 48a in place. Right side rear support leg adjuster tube 44b is permanently attached to the right side rear support leg 42b, facing out at the lower portion of the right side rear support leg 42b. Right side rear support adjuster leg 48b is inserted through the right side rear support leg adjuster tube 44b. The diameter of the right side rear support adjuster leg 48b is sufficiently smaller in diameter than the diameter of the right side rear support leg adjuster tube 44b. This allows the right side rear support leg adjuster 48b to move freely in the right side rear support leg adjuster tube 44b. When the right side rear support adjuster leg 48b is positioned where it is in the correct location the locking device 46b locks the right side rear support adjuster leg 48b in place. Right side front support leg adjuster tube 51b is permanently attached to the right side front support leg adjuster 53b, facing out at the lower portion of the right side front support leg 50b. Right side front support leg adjuster 53b is inserted through the right side front support leg adjuster tube 51b. The diameter of the right side front support leg adjuster 53b is sufficiently smaller in diameter than the diameter of the right side front support leg adjuster tube 51b. This allows the right side front support leg adjuster 53b to move freely in the right side front support leg adjuster tube 51b. When the right side front support leg adjuster 53b is positioned where it is in the correct location the locking device 52b locks the right side front support leg adjuster 53b in place. Left side front support leg adjuster tube 51a is permanently attached to the left side front support leg adjuster 53a, facing out at the lower

portion of the left side front support leg **50a**. Left side front support leg adjuster **53a** is inserted through the left side front support leg adjuster tube **51a**. The diameter of the left side front support leg adjuster **53a** is sufficiently smaller in diameter than the diameter of the left side front support leg adjuster tube **51a**. This allows the left side front support leg adjuster **53a** to move freely in the left side front support leg adjuster tube **51a**. When the left side front support leg adjuster **53a** is positioned where it is in the correct location the locking device **52a** locks the right side front support leg adjuster **53a** in place.

Figs 2-6- Additional Embodiments

Fig 2 –The preferred embodiment of the Fire Protection Sprinkler system of the present invention is illustrated in **Fig.2**, an exploded view of the Fire Protection System. The water manifold **20** freely supports the left side rear support rotator disc **22a**, right side rear support rotator disc **22b**, left side front support rotator disc **24a**, and right side front support rotator disc **24b** at the through hole at approximately the center of the diameter of the discs. The planer surface of the left side rear support rotator disc **22a**, right side rear support rotator disc **22b**, left side front support rotator disc **24a**, right side front support rotator disc **24b** are positioned perpendicular to the surface of the water manifold **20**. The left side rear support rotator disc **22a** and left side front support rotator disc **24a** are positioned to the left side of the water manifold **20** closest to the water manifold hose bib assembly **36**. The right side rear support rotator disc **22b** and right side front support rotator disc **24b** are positioned at the right side of the water manifold **20** closest to the water manifold connection plug **28**. The left side water manifold rotator disc **26a**, is fixed securely at the left side of the water manifold **20** so that the rotational movement along the linear axis of water manifold **20** is transferred to the axis of the left side water manifold rotator disc **26a**. The right side water manifold rotator disc **26b**, is fixed securely on the right side of the water manifold **20** so that the rotational movement along the linear axis of the water manifold is transferred to the axis of the right side water manifold rotator disc **26b**. The left side front support rotator disc **24a** is sandwiched between the left side rear support rotator disc **22a** and the left side water manifold rotator disc **26a**. The left side bolt **32a** passes through slots **23a**, **25a**, and **27a** with the left side nut **30a** screwing onto the left side bolt **32a**. This applies a clamping force to the planer surfaces of the left side rear support rotator disc **22a**, left side front support rotator disc **24a**, left side water manifold rotator disc **26a**, thus restricting the rotational movements of the left side disc assembly. The right side

front support rotator disc **24b** is sandwiched between right side rear support rotator disc **22b** and right side water manifold rotator disc **26b**. The right side bolt **32b** passes through slots **23b**, **25b**, **27b** with right side nut **30b** screwing onto right side bolt **32b** thus applying clamping force to the planer surfaces of right side rear support rotator disc **22b**, right side front support rotator disc **24b**, right side water manifold rotator disc **26b**, restricting the rotational movements of right side rear support rotator disc **22b**, right side front support rotator disc **24b**, right side water manifold rotator disc **26b** securing right side rear support rotator disc **22b**, right side front support rotator disc **24b**, right side water manifold rotator disc **26b** from any movements about the planer surfaces of right side rear support rotator disc **22b**, right side front support rotator disc **24b**, right side water manifold rotator disc **26b**. Leg **42a** and **42b** are connected at the end portion of the leg to the end portions of rear leg support connector **49a** forming a u-shape support member. The remaining end of the leg **42a** is attached securely to the outer diameter of the left side rear support rotator disc **22a** at a point opposite the slot **23a** on the left side rear support rotator disc **22a**. The remaining end of the leg **42b** is attached to the outer diameter of right side rear support rotator disc **22b** at a point opposite the slot **23b** on right side rear support rotator disc **22b**. Legs **50a** and **50b** are connected at the end portion of the leg to the end portions of front leg support connector **49b** forming a u-shape support member. The remaining end of the leg **50a** is attached securely to the outer diameter of the left side front support rotator disc **24a** at a point opposite the slot **25a** on the left side front support rotator disc **24a**. The remaining end of the leg **50b** is attached to the outer diameter of the right side front support rotator disc **24b** at a point opposite the slot **25b** on right side front support rotator disc **24b**. Left side rear support leg adjuster tube **44a** is permanently attached to the left side rear support leg **42a**, facing out at the lower portion of the left side rear support leg **42a**. Left side rear support adjuster leg **48a** is inserted through the left side rear support leg adjuster tube **44a**. The diameter of the left side rear support adjuster leg **48a** is sufficiently smaller in diameter than the diameter of the left side rear support leg adjuster tube **44a**. This allows the left side rear support leg adjuster **48a** to move freely in the left side rear support leg adjuster tube **44a**. When the left side rear support adjuster leg **48a** is positioned where it is in the correct location the locking device **46a** locks the left side rear support adjuster leg **48a** in place. Right side rear support leg adjuster tube **44b** is permanently attached to the right side rear support leg **42b**, facing out at the lower portion of the right side rear support leg **42b**. Right side rear support adjuster leg **48b** is inserted through the right side rear support leg

adjuster tube **44b**. The diameter of the right side rear support adjuster leg **48b** is sufficiently smaller in diameter than the diameter of the right side rear support leg adjuster tube **44b**. This allows the right side rear support leg adjuster **48b** to move freely in the right side rear support leg adjuster tube **44b**. When the right side rear support adjuster leg **48b** is positioned where it is in the correct location the locking device **46b** locks the right side rear support adjuster leg **48b** in place. Right side front support leg adjuster tube **51b** is permanently attached to the right side front support leg adjuster **53b**, facing out at the lower portion of the right side front support leg **50b**. Right side front support leg adjuster **53b** is inserted through the right side front support leg adjuster tube **51b**. The diameter of the right side front support leg adjuster **53b** is sufficiently smaller in diameter than the diameter of the right side front support leg adjuster tube **51b**. This allows the right side front support leg adjuster **53b** to move freely in the right side front support leg adjuster tube **51b**. When the right side front support leg adjuster **53b** is positioned where it is in the correct location the locking device **52b** locks the right side front support leg adjuster **53b** in place. Left side front support leg adjuster tube **51a** is permanently attached to the left side front support leg adjuster **53a**, facing out at the lower portion of the left side front support leg **50a**. Left side front support leg adjuster **53a** is inserted through the left side front support leg adjuster tube **51a**. The diameter of the left side front support leg adjuster **53a** is sufficiently smaller in diameter than the diameter of the left side front support leg adjuster tube **51a**. This allows the left side front support leg adjuster **53a** to move freely in the left side front support leg adjuster tube **51a**. When the left side front support leg adjuster **53a** is positioned where it is in the correct location the locking device **52a** locks the right side front support leg adjuster **53a** in place.

Fig 3 – The Fire Protection Sprinkler system water manifold of the present invention is illustrated in **Fig.3.a** perspective view of the fire protection system water manifold assembly. The left side water manifold rotator disc **26a** is showing the left side water manifold rotator disc slot near the outer edge of the planer surface of the left side water manifold rotator disc **26a**, is fixed securely at the left side of the water manifold **20** so that the rotational movement along the linear axis of water manifold **20** is transferred to the axis of the left side water manifold rotator disc **26a**. The right side water manifold rotator disc **26b** is showing the right side water manifold rotator disc slot **27b** near the outer edge of the planer surface of the right side water manifold rotator disc **26b**, is fixed securely on the right

side of the water manifold 20 so that the rotational movement along the linear axis of the water manifold is transferred to the axis of the right side water manifold rotator disc 26b. The water manifold sprinkler assembly connector tee 40 is secured to the water manifold 20 facilitating the attachment of the sprinkler head assembly 34.

Fig 4 – The Fire Protection Sprinkler system outside stand assembly with rotator discs attached of the present invention is illustrated in **Fig.4.**a perspective view of the fire protection system outside stand assembly with rotator discs attached. Left side front support rotator disc 24a is attached to left side front support leg 50a. Left side front support leg adjuster tube 51a is attached to left side front support leg 50a. Right side front support rotator disc 24b is attached to right side front support leg 50b. Right side front support leg adjuster tube 51b is attached to right side front support leg 50b. Left side and right side front support leg connector 49b connects left side front support leg 50a and right side front support leg 50b forming a U shaped stand. Left side front support leg adjuster 53a is attached below left side support leg 50a. Right side front support leg adjuster 53b is attached below left side support leg 50b. Left side front support rotator disc slot 25a is positioned showing the left side front rotator support disc slot 25a near the outer edge of the planer surface of the left side front support rotator disc 24a. . Right side front support rotator disc slot 25b is positioned showing the left side front rotator support disc slot 25b near the outer edge of the planer surface of the left side front support rotator disc 24b.

Fig 5 – The Fire Protection Sprinkler system inside stand assembly with rotator discs attached of the present invention is illustrated in **Fig.5.**a perspective view of the fire protection system inside stand assembly with rotator discs attached. Left side rear support rotator disc 22a is attached to left side rear support leg 42a. Left side rear support leg adjuster tube 44a is attached to left side rear support leg 42a. Right side rear support rotator disc 22b is attached to right side rear support leg 42b. Right side rear support leg adjuster tube 44b is attached to right side rear support leg 42b. Left side and right side front support leg connector 49a connects left side rear support leg 42a and right side rear support leg 42b forming a U shaped stand. Left side rear support leg adjuster 46a is attached below left side support leg 42a. Right side rear support leg adjuster 46b is attached below left side support leg 42b. Left side rear support rotator disc slot 23a is

positioned showing the left side rear rotator support disc slot **23a** near the outer edge of the planer surface of the left side rear support rotator disc **22a**. Right side rear support rotator disc slot **23b** is positioned showing the left side front rotator support disc slot **23b** near the outer edge of the planer surface of the left side rear support rotator disc **22b**.

Fig 6 – A perspective view is illustrated in **Fig 6** showing a multitude of Fire Protection Systems **18** attached to the roof of a house **54** with a spray of water **55** emitting from the spray heads of the Fire Protection Sprinkler systems **18**.

OPERATION OF INVENTION

The preferred embodiment of the fire protection sprinkler system of the present invention is illustrated in **Fig.1.a** a perspective view of the fire protection system. The water manifold **20** freely supports the left side rear support rotator disc **22a**, right side rear support rotator disc **22b**, left side front support rotator disc **24a**, and right side front support rotator disc **24b** at the through hole at approximately the center of the diameter of the discs. The planer surface of the left side rear support rotator disc **22a**, right side rear support rotator disc **22b**, left side front support rotator disc **24a**, right side front support rotator disc **24b** are positioned perpendicular to the surface of the water manifold **20**. The left side rear support rotator disc **22a** and left side front support rotator disc **24a** are positioned to the left side of the water manifold **20** closest to the water manifold hose bib assembly **36**. The right side rear support rotator disc **22b** and right side front support rotator disc **24b** are positioned at the right side of the water manifold **20** closest to the water manifold connection plug **28**. The left side water manifold rotator disc **26a**, is fixed securely at the left side of the water manifold **20** so that the rotational movement along the linear axis of water manifold **20** is transferred to the axis of the left side water manifold rotator disc **26a**. The right side water manifold rotator disc **26b**, is fixed securely on the right side of the water manifold **20** so that the rotational movement along the linear axis of the water manifold is transferred to the axis of the right side water manifold rotator disc **26b**. The left side front support rotator disc **24a** is sandwiched between the left side rear support rotator disc **22a** and the left side water manifold rotator disc **26a**. The left side bolt **32a** passes through slots **23a**, **25a**, and **27a** with the left side nut **30a** screwing onto the left side bolt **32a**. This applies a clamping force to the planer surfaces of the left side rear support rotator disc **22a**, left side front support rotator disc **24a**, left side water manifold rotator disc

26a, thus restricting the rotational movements of the left side disc assembly. The right side front support rotator disc **24b** is sandwiched between right side rear support rotator disc **22b** and right side water manifold rotator disc **26b**. Right side bolt **32b** passes through slots **23b**, **25b**, **27b** with right side nut **30b** screwing onto right side bolt **32b** thus applying clamping force to the planer surfaces of right side rear support rotator disc **22b**, right side front support rotator disc **24b**, right side water manifold rotator disc **26b**, restricting the rotational movements of right side rear support rotator disc **22b**, right side front support rotator disc **24b**, right side water manifold rotator disc **26b** securing right side rear support rotator disc **22b**, right side front support rotator disc **24b**, right side water manifold rotator disc **26b** from any movements about the planer surfaces of right side rear support rotator disc **22b**, right side front support rotator disc **24b**, right side water manifold rotator disc **26b**. Leg **42a** and **42b** are connected at the end portion of the leg to the end portions of rear leg support connector **49a** forming a u-shape support member. The remaining end of the leg **42a** is attached securely to the outer diameter of the left side rear support rotator disc **22a** at a point opposite the slot **23a** on the left side rear support rotator disc **22a**. The remaining end of the leg **42b** is attached to the outer diameter of right side rear support rotator disc **22b** at a point opposite the slot **23b** on right side rear support rotator disc **22b**. Legs **50a** and **50b** are connected at the end portion of the leg to the end portions of front leg support connector **49b** forming a u-shape support member. The remaining end of the leg **50a** is attached securely to the outer diameter of the left side front support rotator disc **24a** at a point opposite the slot **25a** on the left side front support rotator disc **24a**. The remaining end of the leg **50b** is attached to the outer diameter of right side front support rotator disc **24b** at a point opposite the slot **25b** on right side front support rotator disc **24b**. Left side rear support leg adjuster tube **44a** is permanently attached to the left side rear support leg **42a**, facing out at the lower portion of the left side rear support leg **42a**. Left side rear support adjuster leg **48a** is inserted through the left side rear support leg adjuster tube **44a**. The diameter of the left side rear support adjuster leg **48a** is sufficiently smaller in diameter than the diameter of the left side rear support leg adjuster tube **44a**. This allows the left side rear support leg adjuster **48a** to move freely in the left side rear support leg adjuster tube **44a**. When the left side rear support adjuster leg **48a** is positioned where it is in the correct location the locking device **46a** locks the left side rear support adjuster leg **48a** in place.

Conclusions, Ramifications and Scop

Accordingly, the reader will see that the Fire Protection System of this invention can be used conveniently, inexpensively and can be set up quickly.

It can be made of different materials.

It can be made using different dimensions, such as, making it taller, shorter, wider, narrower, lighter, heavier, or in whatever configurations not stated.

It allows for an easy and quick setup in emergency situations.

Although the description above contains much specificity, these should not be construed as limiting the scope of the invention, but as merely providing illustrations of some of the presently preferred embodiments of this invention. For example, the water delivery system can range from the standard tap water supply to a pressurized, electronically controlled, or a liquid filled tank system.

Thus, the scope of the invention should be determined by the appended claims and their legal equivalents, rather than by the examples given.